

The document and process conversion measures necessary to comply with this amendment shall be completed by 1 September 92.

INCH-POUND

MIL-M-38510J
AMENDMENT 1
1 July 92

MILITARY SPECIFICATION
MICROCIRCUITS,
GENERAL SPECIFICATION FOR

This amendment forms part of MIL-M-38510J, dated 15 November 1991, and is approved for use by all Departments and Agencies of the Department of Defense.

The attached insertable replacement pages listed below are replacements for the stipulated pages. When the new pages have been entered in the document, insert the amendment as the cover sheet to the specification.

Replacement pages

84a
84b

Pages replaced

New page
New page

PAGE 2

2.1.1, add to STANDARDS, MILITARY:

"MIL-STD-1562 - List of Standard Microcircuits."

PAGE 6

3.1.3.30, add sentence to the end of paragraph: "Consideration must be given to the worst case electrical conditions (e.g. CMOS leakage current) in selection of the package family and technology combination for subgroups D-3 and D-4."

Add the following new paragraph:

"3.1.3.34 Diminishing JAN source (DJS) device. A DJS device is a device which has been classified as being a candidate for listing in part IV (see 6.4.1.2) of the QPL-38510. In order to become a DJS candidate the device must meet the following criteria:

- a. No other sources for that device are listed in part I, II, or III of the QPL-38510.
- b. Candidacy must be approved by the qualifying activity.
- c. These devices are listed or are intended to be listed in the Logistics or continuous replacement only table (table III) of MIL-STD-1562.

Once the device is determined to be a candidate the requirements of appendix I shall be followed to receive listing in the QPL-38510."

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PAGE 11

Add the following new paragraph:

"3.4.1.2.8 Third party manufacturing. Third party manufacturing, including the circuit design process, is permitted as approved by the qualifying activity. The elements (i.e. processes of design, wafer fabrication, assembly, screening, testing and sample testing) necessary for the manufacturing of the microcircuit shall be approved, by the qualifying activity, as elements of the manufacturer's certification. The certified manufacturer is responsible for effectively controlling the third party and assumes complete responsibility for the product."

PAGE 16

3.5.1, Second sentence: Delete "in the device specification or drawing (e.g. polyimide interlayer dielectric or alpha particle die coating)." and substitute "in the associated detail specification or standardized military drawing (e.g. polyimide interlayer dielectric, alpha particle die coating)."

PAGE 24

3.5.9, delete and substitute:

"3.5.9 Die thickness. Appropriate die thickness requirements for each product or process shall be defined in the manufacturer's baseline documentation. This thickness shall be sufficient to avoid die cracks due to handling, die attach wire bonding or other process stresses, which can lead to latent field failure."

PAGE 35

4.4.1, add sentence to the end of the paragraph: "For DJS device (see 3.1.3.34) qualification requirements, see appendix 1."

PAGE 41

4.5.5.1c, delete and substitute:

"c. Different device types may be used for different subgroups. Testing of a subgroup using a single device type enclosed in the package type shall be considered as complying with the requirements for that subgroup for all detail device specifications utilizing the package family and lead finish. Technical justification must be given for device selections for subgroups D-3 and D-4 in regards to device technology electrical performance and package interaction (e.g. if there is no interaction, only one group D-3 and D-4 test for two technologies using the same package family would be necessary.) Rotation of device technology is allowed to address this requirement. For nonconformance see 4.5.8."

PAGE 46

Add the following new paragraph:

"6.4.1.2 Part IV, Qualified Products List. Products listed in part IV, QPL-38510 are considered qualified products. The intent of this listing is to allow continued procurement of DJS devices to the same part number for logistics support or completion of system production. These devices are not JAN devices. These devices are not intended for and should under no circumstances be used for new design. This listing contains all microcircuits which have been subjected to sufficient tests to demonstrate that they meet the electrical test requirements of this document and the applicable military device specification. Quality conformance inspection for shipment are certified according to the class B requirements of this document and DJS requirements of Appendix 1 (See Appendix 1, 30.5 and 30.6)."

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CONCLUDING MATERIAL

Custodians:

Army - ER
Navy - EC
Air Force - 17
NASA - NA

Review activities:

Army - AR, MI, PA
Navy - MC, TD
Air Force - 19, 85, 99
DLA - ES

User activities:

Army - SM
Navy - AS, CG, OS, SH
Air Force - 13

Civil agency coordinating activity:
DOT-FAA(RD-650)

Preparing activity:
Air Force - 17

Agent:
DLA - ES

(Project 5962-1271)

APPENDIX I

DIMINISHING JAN SOURCE PROGRAM REQUIREMENTS

10. SCOPE

10.1 Scope. This appendix contains the requirements necessary for a device manufacturer to supply product for the Diminishing JAN Source (DJS) program. For devices identified by the qualifying activity as DJS candidates (See 3.1.3.34) either by device manufacturer request or solicitation of the qualifying activity, this appendix is a mandatory part of this specification. Product supplied under this program must meet all class B requirements except where exception is specifically taken in this appendix. Any class B requirement in this specification not specifically addressed as a unique requirement in this appendix is required to be met for listing and shipping of product to this program. This program applies to non-radiation hardened class B product only. The intent of this program is to satisfy specific needs of the government and is not intended to replace or supersede any other parts procurement program. Listing as a source in this program is left solely to the qualifying activity and all attempts will be made to find alternate sources for product in this category prior to it being classified as a DJS candidate. A device manufacturer may be removed from listing at any time by the qualifying activity. In addition, the preparing activity reserves the right to discontinue this program at any time.

20. APPLICABLE DOCUMENTS

20.1 This section is not applicable to this appendix.

30. REQUIREMENTS

30.1 General. The qualification report submission is not required and certification shall be based on the requirements of 30.3. Manufacturers claiming compliance to the DJS candidate device's military detail specification must have qualifying activity approval in order to receive listing on part IV of the QPL (see 6.4.1.2). In order to be listed as a source, the manufacturer must submit to the qualifying activity a certificate of compliance to the military detail specification and to all requirements for DJS devices and part IV listing contained herein. In the event that a part IV device is later qualified to part I or part II of the QPL, the device will be removed from part IV along with all sources.

30.2 Country of Manufacture. DJS devices (see 3.1.3.34), may be assembled and tested outside of the United States. Wafer fabrication must be performed on a certified line in the United States, its territories, or a NATO country. Under no circumstances will the JAN certification mark be put on a DJS device. In addition, the country in which assembly is performed must be marked on the device.

30.3 Certification. Manufacturers of DJS devices are required to have certification of the wafer fabrication line used to manufacture the device prior to being listed in part IV of the QPL. The manufacturer certification shall be in accordance with 3.4.1.2.

30.4 Qualification. The manufacturer shall maintain documentation of qualification testing for review of the qualifying activity upon request. This qualification testing shall be performed using die produced on the certified wafer fabrication line. The qualification must assure that the microcircuits meet the electrical test requirements of this document and the applicable military detail specification. Testing of microcircuits to subgroups A, B, C, and D as defined in this document must be successfully completed prior to shipment.

30.5 Retention of Qualification. The reporting requirements do not apply to QPL part IV device listings, but the information contained in items a through c of 4.4.3 shall be maintained and made available to the qualifying activity for review. Item d of 4.4.3 must be submitted to the qualifying activity for the specified retention of qualification period.

30.6 Quality Conformance Inspection. Group C coverage shall be maintained on die produced within the four calendar quarters prior to the die fabrication date code being submitted for acceptance. Generic data representative of the die family or linear microcircuit groups (see appendix E) is acceptable for coverage. All other Group C requirements for DJS devices shall be in accordance with 4.5.

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30.6 Marking. DJS devices shall meet all marking requirements of this specification (See 3.6) with the following exceptions:

- a. The "JAN" or "J" certification mark shall not be used.
- b. The country in which assembly is performed shall be marked on the device.
- c. The fabrication quarter marking is optional.